CLAIMS

1. A protein comprising the amino acid sequence of any one of SEQ ID NOs: 2 to 4.

2. A protein comprising peptidase activity towards brain APP, wherein said protein is selected from,

(a) a protein comprising an amino acid sequence in which one or more amino acids are replaced, deleted, inserted, and/or added to the amino acid sequence of any one of SEQ ID NOs: 2 to 4,

(b) a protein encoded by a DNA that hybridizes with a DNA comprising the nucleotide sequence of SEQ ID NO: 1.

3. A DNA encoding the protein of claim 1 or 2.

4. The DNA of claim 3 comprising the coding region of the nucleotide sequence of SEQ ID NO: 1.

5. A vector into which the DNA of claim 3 or 4 is inserted.

6. A host cell ~~carrying~~ transformed with the vector of claim 5.

7. A method for producing the protein of claim 1 or 2, wherein said method comprises the steps of culturing the host cell of claim 6, and collecting from the cell or its culture supernatant, a recombinant protein expressed within the cell.

8. An antibody against the protein of claim 1 or 2.

9. A partial peptide of the protein of claim 1 or 2.

10. A polynucleotide comprising at least 15 nucleotides, which hybridizes with a DNA comprising the nucleotide sequence of SEQ ID NO: 1 or its complementary strand.

11. A method for screening a compound that binds to the protein of claim 1 or 2, comprising the steps of:

(a) contacting a test sample with the protein or a partial peptide thereof,

(b) detecting the binding activity between the test sample and the protein or the partial peptide thereof, and

(c) selecting a compound that has an activity to bind to the protein or the partial peptide thereof.

12. A compound that binds to the protein of claim 1 or 2.

13. The compound of claim 12, wherein said compound is isolated by the method of claim 11.

14. A method for screening a compound that promotes or inhibits the peptidase activity of the protein of claim 1 or 2, comprising the steps of:

(a) contacting the protein of claim 1 or 2 with its substrate in the presence of a test sample,

(b) detecting the cleavage of the substrate, and

(c) selecting a compound comprising the activity to increase or decrease substrate cleavage caused by the protein of claim 1 or 2, in comparison to the cleavage in the absence of the test sample (control).

15. The method of claim 14, wherein said substrate is brain APP.

16. A compound comprising the activity to promote or inhibit peptidase activity of the protein of claim 1 or 2.

17. The compound of claim 16, wherein said compound is isolated by the method of claim 14 or 15.

18. An Aβ production regulator, comprising the protein of claim 1 or 2 as an active ingredient.

19. A drug for treating a disease that causes accumulation of Aβ in the brain, wherein said drug comprises the protein of claim 1 or 2 as an active ingredient.

20. The drug of claim 19, wherein said disease that causes accumulation of Aβ in the brain is selected from the group consisting of senile dementia, Alzheimer's disease, Down's syndrome, hereditary cerebral hemorrhage, and cephalic contusion.

21. An Aβ production regulator, comprising a compound of any one of claim 12, 13, 16, or 17 as an active ingredient.

22. A drug for treating a disease that causes accumulation of Aβ in the brain, comprising a compound of any one of claim 12, 13, 16, or 17 as an active ingredient.

23. The drug of claim 22, wherein said disease that causes accumulation of Aβ in the brain is selected from the group consisting of senile dementia, Alzheimer's disease, Down's syndrome, hereditary cerebral hemorrhage, and cephalic contusion.

24. A kit for screening a compound that promotes or inhibits peptidase activity of the protein of claim 1 or 2, wherein said kit comprises the protein of claim 1 or 2.

25. The kit of claim 24, further comprising a substrate of the protein of claim 1 or 2.

26. The method of claim 25, wherein said substrate is brain APP.

27. A method for testing a disease that causes accumulation of Aβ in the brain, comprising the steps of:

(a) preparing a sample from a subject, and

(b) detecting the amount of the protein of claim 1 or 2 contained within the sample, using the antibody of claim 8.

28. The method of claim 27, wherein said sample is spinal fluid or serum.

29. The method of claim 27 or 28, wherein said disease that causes accumulation of Aβ in the brain is selected from the group consisting of senile dementia, Alzheimer's disease, Down's syndrome, hereditary cerebral hemorrhage, and cephalic contusion.

30. A reagent for testing a disease that causes accumulation of Aβ in the brain, comprising the antibody of claim 8.

31. The reagent of claim 30, wherein said disease that causes accumulation of Aβ in the brain is selected from the group consisting of senile dementia, Alzheimer's disease, Down's syndrome, hereditary cerebral hemorrhage, and cephalic contusion.